The Preventing Dementia MOOC: Education as a Public Health Intervention
Dementia is THE Public Health issue of the 21st Century


- World population rapidly ageing
- Estimated 46.8 million living with dementia worldwide currently.
- 74 million by 2030.
- 131 million by 2050

<table>
<thead>
<tr>
<th>Cause</th>
<th>2003</th>
<th>Rank</th>
<th>2013</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic heart disease</td>
<td>25439</td>
<td>1</td>
<td>19766</td>
<td>1</td>
</tr>
<tr>
<td>Dementia</td>
<td>4275</td>
<td>6</td>
<td>10993</td>
<td>2</td>
</tr>
<tr>
<td>Stroke</td>
<td>12240</td>
<td>2</td>
<td>10549</td>
<td>3</td>
</tr>
<tr>
<td>Trachea/lung cancer</td>
<td>6976</td>
<td>3</td>
<td>8217</td>
<td>4</td>
</tr>
<tr>
<td>Chronic lower respiratory diseases</td>
<td>5985</td>
<td>4</td>
<td>7148</td>
<td>5</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3389</td>
<td>9</td>
<td>4328</td>
<td>6</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>4447</td>
<td>5</td>
<td>4234</td>
<td>7</td>
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<tr>
<td>Blood/lymph caner</td>
<td>3712</td>
<td>7</td>
<td>4094</td>
<td>8</td>
</tr>
<tr>
<td>Heart failure</td>
<td>2988</td>
<td>10</td>
<td>3244</td>
<td>9</td>
</tr>
<tr>
<td>Prostate cancer</td>
<td>2842</td>
<td>12</td>
<td>3122</td>
<td>10</td>
</tr>
</tbody>
</table>

Australian Bureau of Statistics – top 10 Causes of Death
The risk of developing dementia increases with age.

Source – MRC-Cognitive Function and Aging Study

Overall risk approx 6.6% over age 65 (95% CI 5.9-7.3)
The fastest growing group is 80+ years of age - the most ‘at risk’ group for dementia.
Wicking Dementia Research and Education Centre

- Established in 2008, > 50 staff and students
- Core funding from the JO and JR Wicking Trust (Equity Trustees)
- Multidisciplinary: Social scientists, neuroscientists, psychologists, geriatricians, nurses, family doctors, speech pathologists, health economists, educational technologists
- Three major Research Themes
  - Care
  - Cause
  - Prevention
Dementia knowledge is deficient

- Health systems are poorly oriented towards quality dementia care.
- Knowledge deficits in aged care workers, nurses, doctors and family carers
- Limited educational resources that provide information in a systematic fashion
- Led to world’s first Massive Open Online Course (MOOC) on ‘Understanding Dementia’ in 2013. Reached over 90,000 participants to date
- Emerging data that dementia risk may be reduced led to development of second MOOC
Modifiable and Non-Modifiable Risk Factors for Dementia

**Negative**

- Ageing
- Family history (eg *APOE* gene)
- **Mid-life hypertension**
- Diabetes
- Smoking
- **Physical inactivity**
- Low Education in early life
- Neurological disease (Parkinson’s disease/amyotrophic lateral sclerosis)
- Depression
- Head injury
- Anaesthesia?

**Positive**

- Family history
- **Early life linguistic ability**
- **Life long cognitive stimulation**
- Social engagement?
- Diet?
Evidence of major modifiable risk factors

Approximately a third of Alzheimer’s disease cases worldwide can be attributed to seven modifiable risk factors (Population Attributable Risk (PAR), Norton et al, 2014)

- Low educational attainment (PAR 19%)
- Smoking (PAR 14%)
- Physical inactivity (PAR 13%)
- Depression (PAR 8%)
- Midlife hypertension (PAR 5%)
- Diabetes (PAR 3%)
- Midlife obesity (PAR 2%)
The Preventing Dementia MOOC examines the evidence for potentially modifiable risk factors for dementia. It highlights the 7 major potentially modifiable risk factors (low education, diabetes, mid-life hypertension, smoking, obesity, physical inactivity and depression) as well as other potential factors. The course introduces the concept of varying levels of an evidence base in dementia risk research. It also includes research surveys on knowledge and attitudes on dementia, personal risk assessment tool.
Academic team

Dr Maree Farrow
Dr Shannon Klekociuk
Dr David Ward
Professor James Vickers

Guest experts

Professor Kaarin Anstey, Australian National University
Professor Carol Brayne, University of Cambridge
Professor Nicola Lautenschlager, University of Melbourne
Professor Andrew Robinson, University of Tasmania
Dr Ben Schüz, University of Tasmania
Professor Velandai Srikanth, Monash University
Associate Professor Mathew Summers, University of the Sunshine Coast
Associate Professor Michael Valenzuela, University of Sydney
5 Modules
1. Can dementia be prevented?
2. Risk factors for dementia
3. Dementia risk – it’s not all in your head
4. A healthy and active mind
5. Interventions for prevention
First run in 2016

- Enrolled: 11,286
- Completed: 5,549 (49%)
- Major profile: female, middle-aged, with family or professional connection to dementia
- Feedback survey: >2,100
I have already applied the knowledge I have gained from the MOOC.
### Which module did you find most useful?

<table>
<thead>
<tr>
<th>Module</th>
<th>Votes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1: Can dementia be prevented?</td>
<td>160</td>
<td>7.62 %</td>
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<tr>
<td>Module 2: Risk factors for dementia</td>
<td>909</td>
<td>43.27 %</td>
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<tr>
<td>Module 3: Dementia risk - it's not all in your head</td>
<td>382</td>
<td>18.18 %</td>
</tr>
<tr>
<td>Module 4: A healthy and active life</td>
<td>460</td>
<td>21.89 %</td>
</tr>
<tr>
<td>Module 5: Interventions for prevention</td>
<td>190</td>
<td>9.04 %</td>
</tr>
</tbody>
</table>

### Which module did you learn the most from?

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<th>Votes</th>
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</tr>
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<tbody>
<tr>
<td>Module 1: Can dementia be prevented?</td>
<td>161</td>
<td>7.65 %</td>
</tr>
<tr>
<td>Module 2: Risk factors for dementia</td>
<td>777</td>
<td>36.93 %</td>
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<tr>
<td>Module 3: Dementia risk - it's not all in your head</td>
<td>493</td>
<td>23.43 %</td>
</tr>
<tr>
<td>Module 4: A healthy and active life</td>
<td>420</td>
<td>19.96 %</td>
</tr>
<tr>
<td>Module 5: Interventions for prevention</td>
<td>253</td>
<td>12.02 %</td>
</tr>
</tbody>
</table>
2017

- Currently enrolled: 12,236
- 95 countries
- CareVisions China assisting with reach into China
Preventing DEMENTIA

Free Preventing Dementia MOOC
Date: 2017-04-25 20:41
Enrolled: 12,236
Cities: 2,012
Countries: 95
Starting 34th April - Click To Enroll
Conclusions

• Dementia is increasing, knowledge gaps are disabling
• MOOCs are an efficient and accessible way of reaching a broad range of people to support dementia literacy
• The Preventing Dementia MOOC may be a tool to build awareness and inform strategies to reduce age-related prevalence of dementia
• Enrolments open until May 19th
mooc.utas.edu.au
utas.edu.au/wicking

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